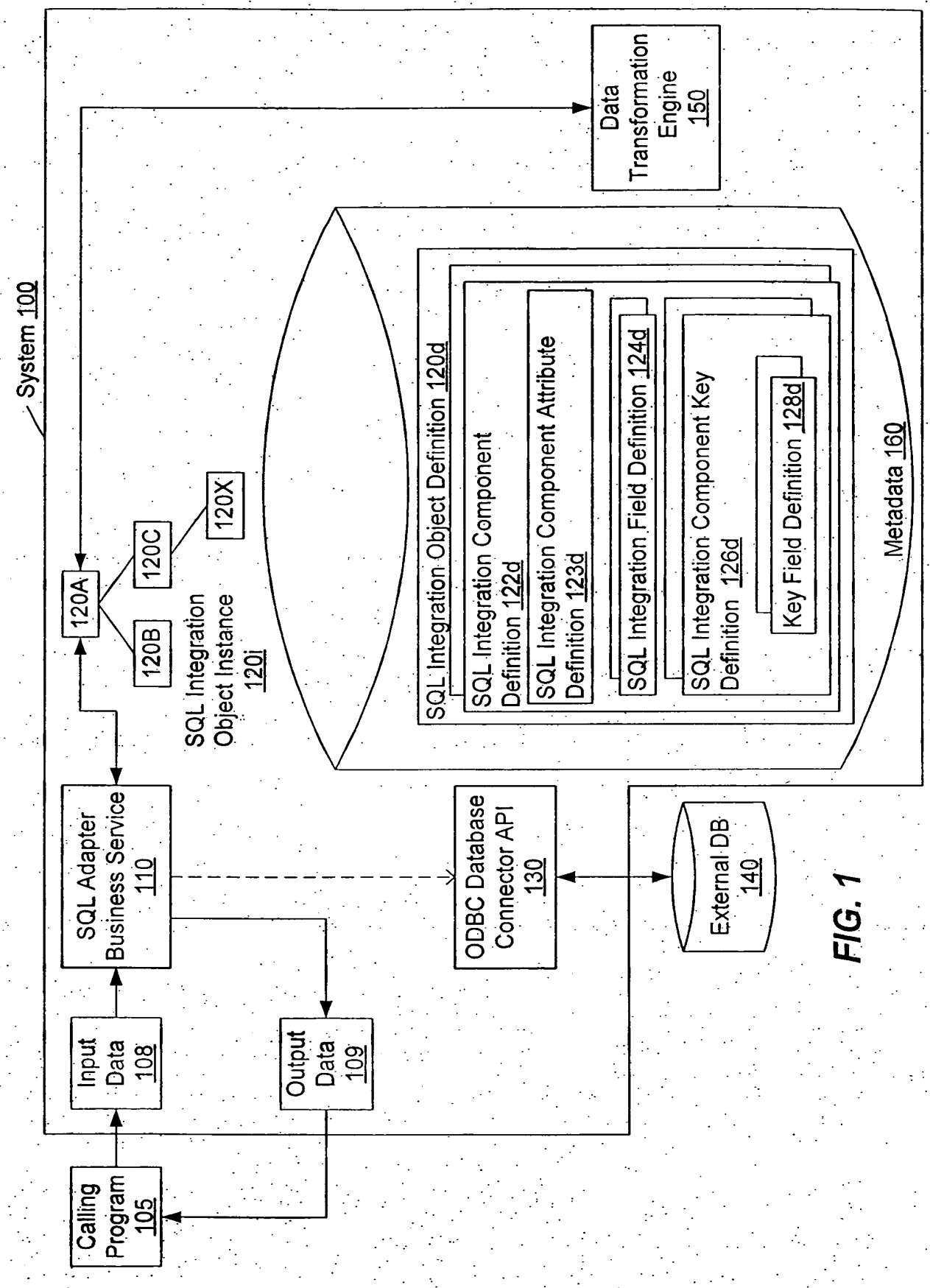

System 100
Data Transformation Engine 150
Metadata 160
SQL Integration Object Definition 120d
SQL Integration Component Definition 122d
SQL Integration Component Attribute Definition 123d
SQL Integration Field Definition 124d
SQL Integration Component Key Definition 126d
Key Field Definition 128d
120A
120B
120C
120X
SQL Integration Object Instance 120i
SQL Adapter Business Service 110
ODBC Database Connector API 130
External DB 140
Input Data 108
Output Data 109
Calling Program 105

FIG. 1

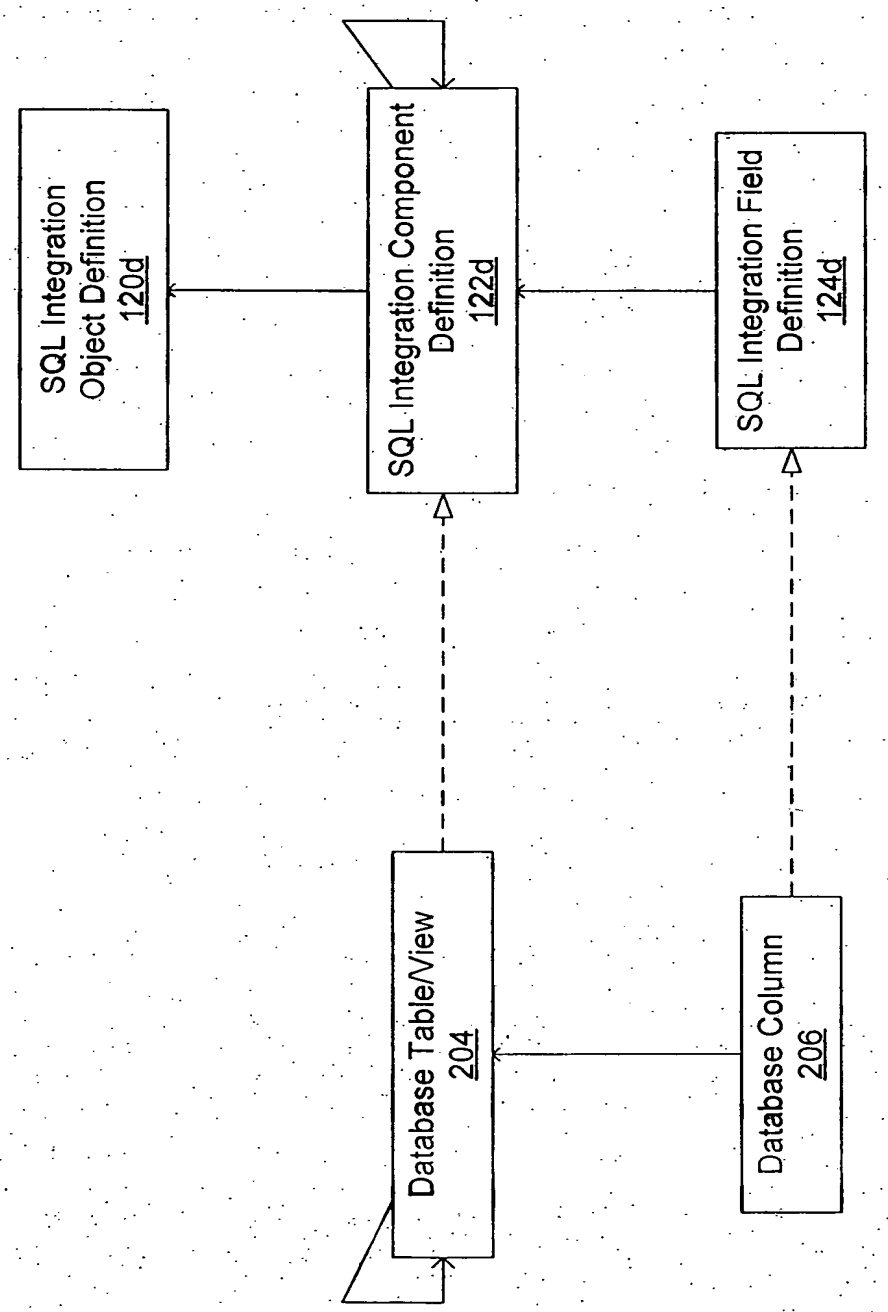

SQL Integration Object Definition 120d
SQL Integration Component Definition 122d
SQL Integration Field Definition 124d
Database Table/View 204
Database Column 206

FIG. 2

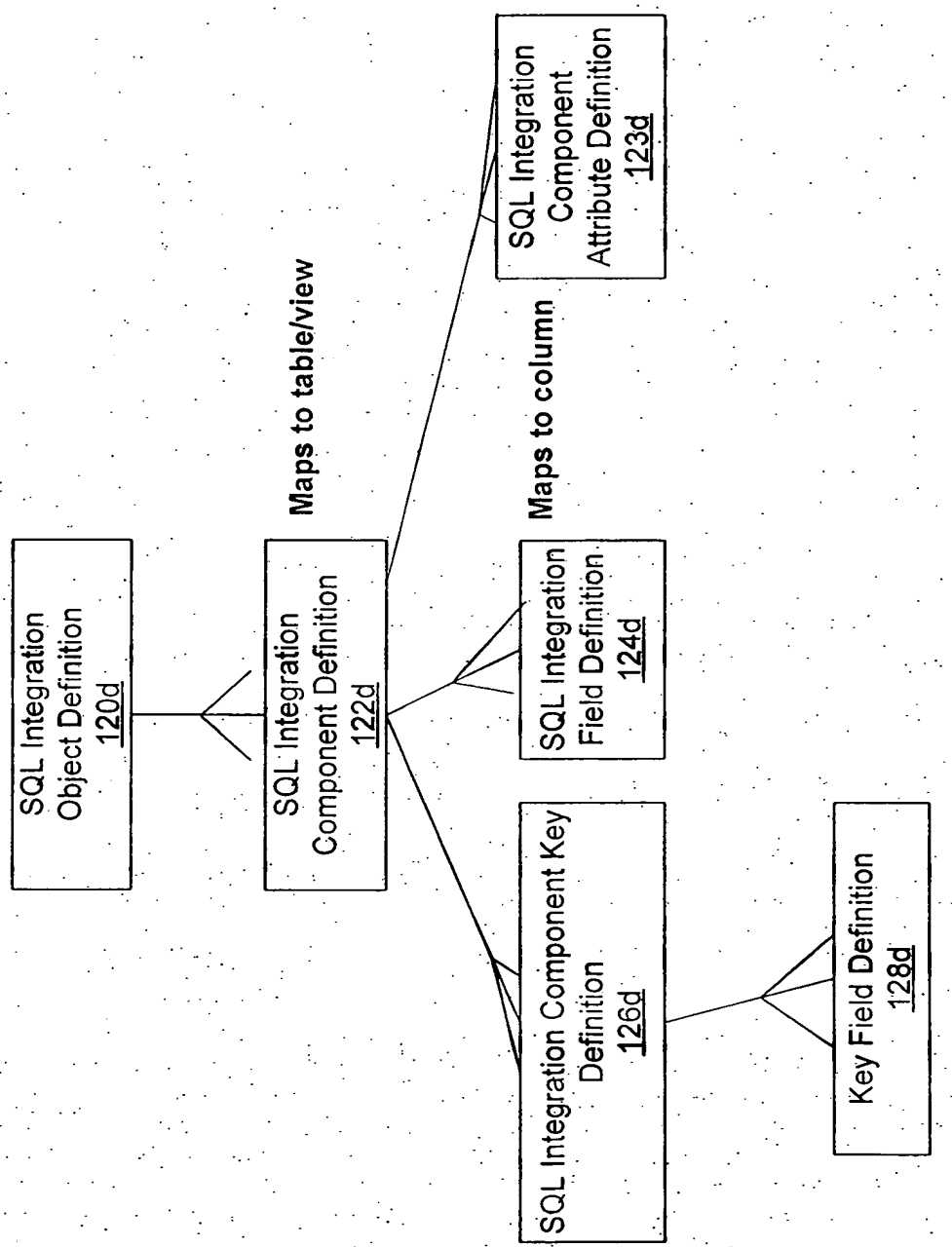

SQL Integration Object Definition 120d
SQL Integration Component Definition 122d
Maps to table/view
SQL Integration Component Attribute Definition 123d
Maps to column
SQL Integration Field Definition 124d
SQL Integration Component Key Definition 126d
Key Field Definition 128d

FIG. 3

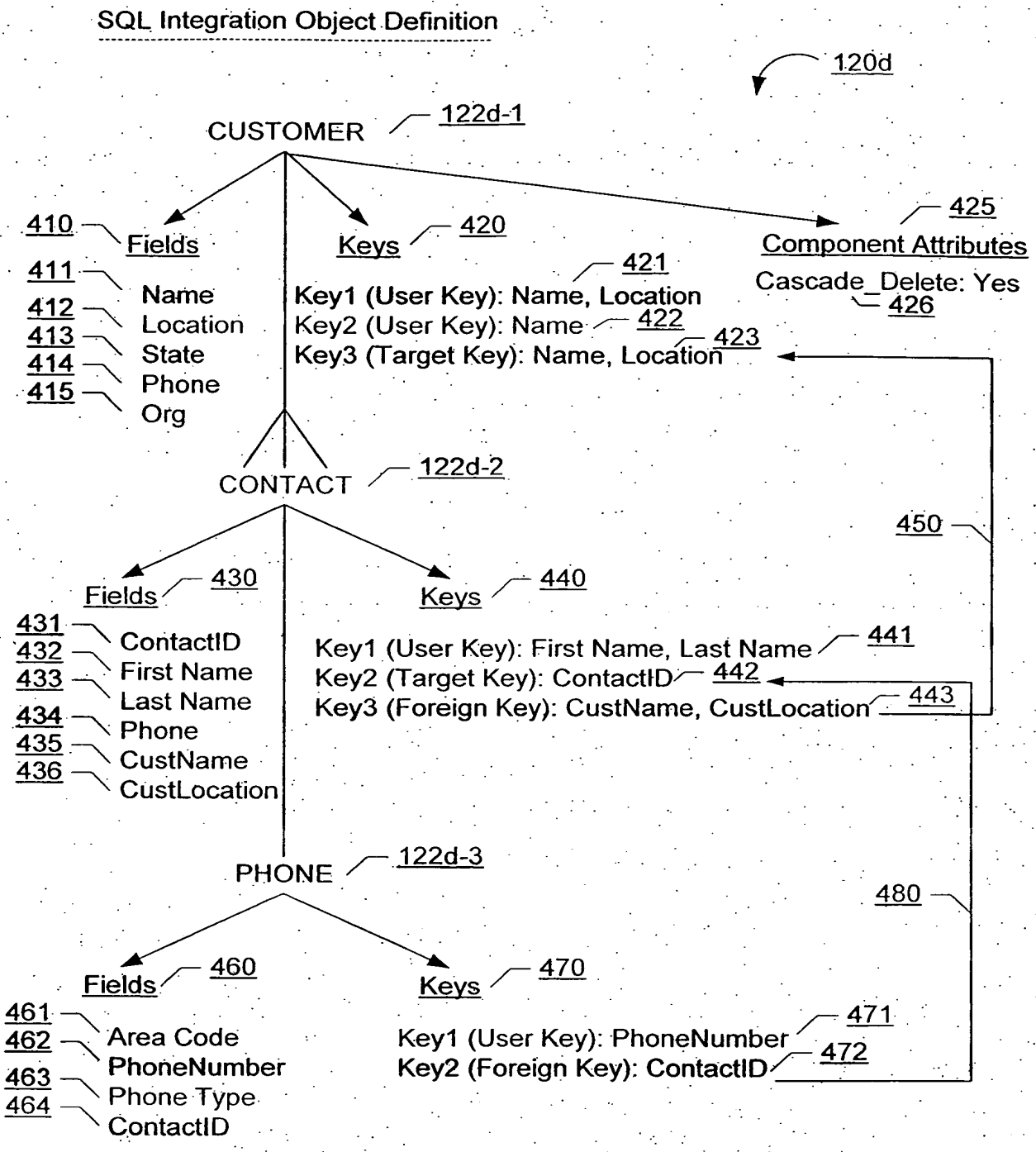

SQL Integration Object Definition
120d
CUSTOMER
122d-1
410
Fields
411
Name
412
Location
413
State
414
Phone
415
Org
Keys
420
421
Key1 (User Key): Name, Location
Key2 (User Key): Name
422
Key3 (Target Key): Name, Location
423
425
Component Attributes
Cascade_Delete: Yes
426
CONTACT
122d-2
450
Fields
430
431
ContactID
432
First Name
433
Last Name
434
Phone
435
CustName
436
CustLocation
Keys
440
Key1 (User Key): First Name, Last Name
441
Key2 (Target Key): ContactID
442
Key3 (Foreign Key): CustName, CustLocation
443
PHONE
122d-3
480
Fields
460
461
Area Code
462
PhoneNumber
463
Phone Type
464
ContactID
Keys
470
Key1 (User Key): PhoneNumber
471
Key2 (Foreign Key): ContactID
472

FIG. 4

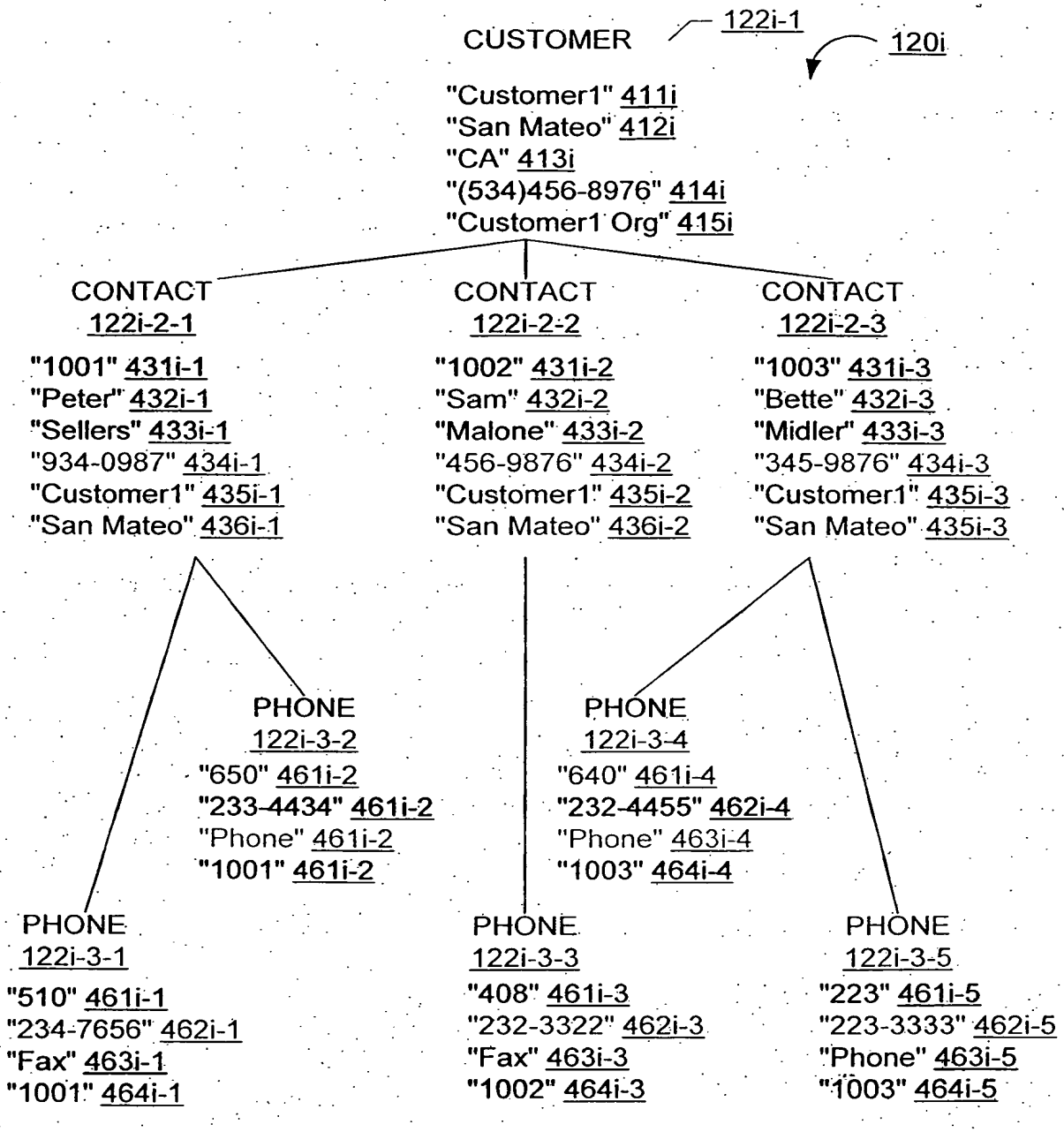

SQL Integration Object Instance
CUSTOMER
122i-1
120i
"Customer1" 411i
"San Mateo" 412i
"CA" 413i
"(534)456-8976" 414i
"Customer1 Org" 415i
CONTACT
122i-2-1
"1001" 431i-1
"Peter" 432i-1
"Sellers" 433i-1
"934-0987" 434i-1
"Customer1" 435i-1
"San Mateo" 436i-1
CONTACT
122i-2-2
"1002" 431i-2
"Sam" 432i-2
"Malone" 433i-2
"456-9876" 434i-2
"Customer1" 435i-2
"San Mateo" 436i-2
CONTACT
122i-2-3
"1003" 431i-3
"Bette" 432i-3
"Midler" 433i-3
"345-9876" 434i-3
"Customer1" 435i-3
"San Mateo" 435i-3
PHONE
122i-3-2
"650" 461i-2
"233-4434" 461i-2
"Phone" 461i-2
"1001" 461i-2
PHONE
122i-3-4
"640" 461i-4
"232-4455" 462i-4
"Phone" 463i-4
"1003" 464i-4
PHONE
122i-3-1
"510" 461i-1
"234-7656" 462i-1
"Fax" 463i-1
"1001" 464i-1
PHONE
122i-3-3
"408" 461i-3
"232-3322" 462i-3
"Fax" 463i-3
"1002" 464i-3
PHONE
122i-3-5
"223" 461i-5
"223-3333" 462i-5
"Phone" 463i-5
"1003" 464i-5

FIG. 5

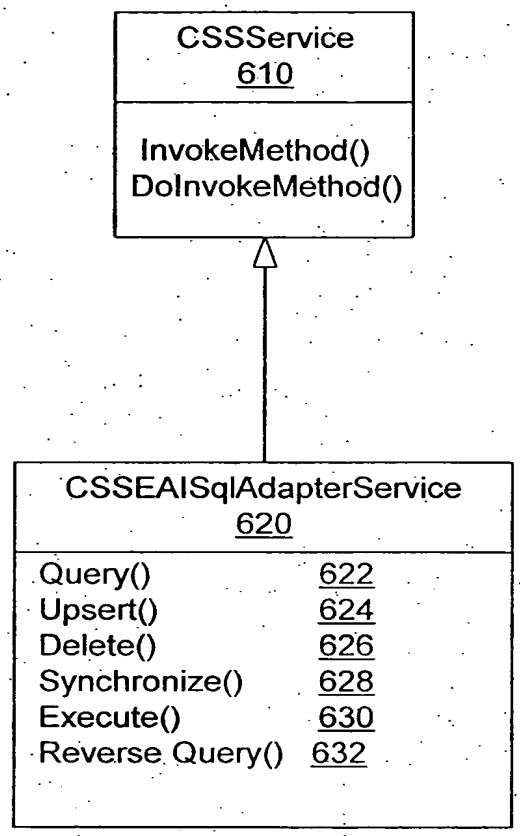
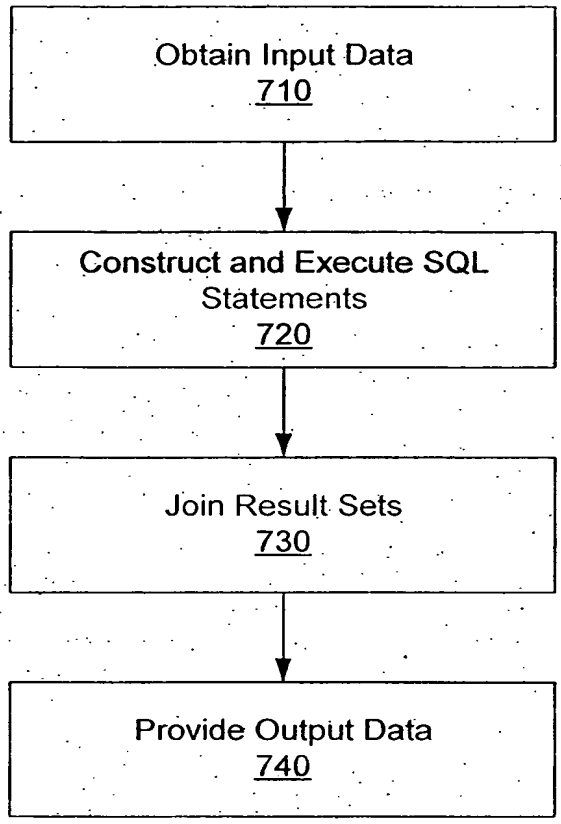

CSSService
610
InvokeMethod()
DoInvokeMethod()
CSSEAISqlAdapterService
620
Query() 622
Upsert() 624
Delete() 626
Synchronize() 628
Execute() 630
Reverse Query() 632

FIG. 6


Obtain Input Data
710
Construct and Execute SQL Statements
720
Join Result Sets
730
Provide Output Data
740

Query
FIG. 7

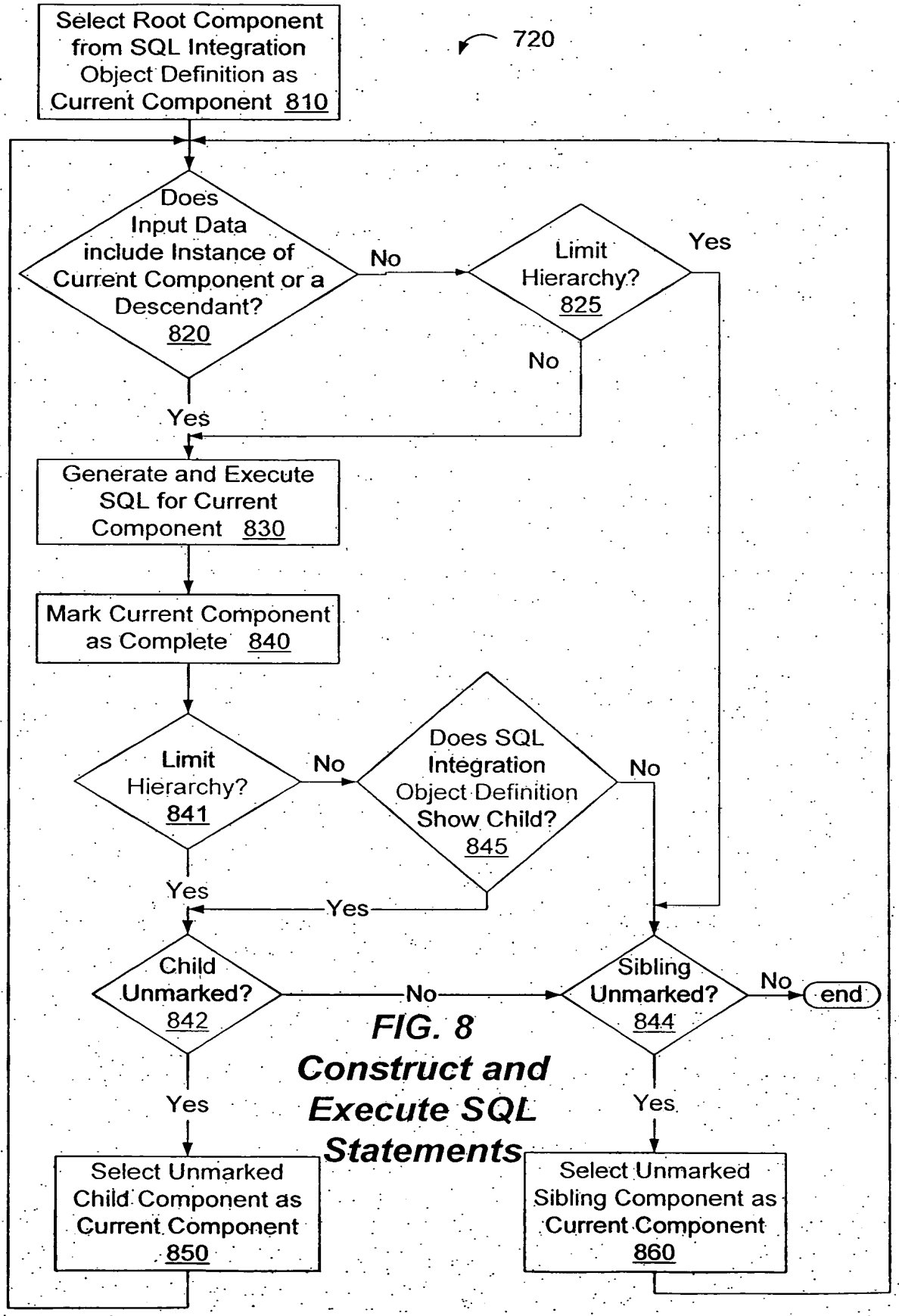


FIG. 8
Construct and Execute SQL Statements

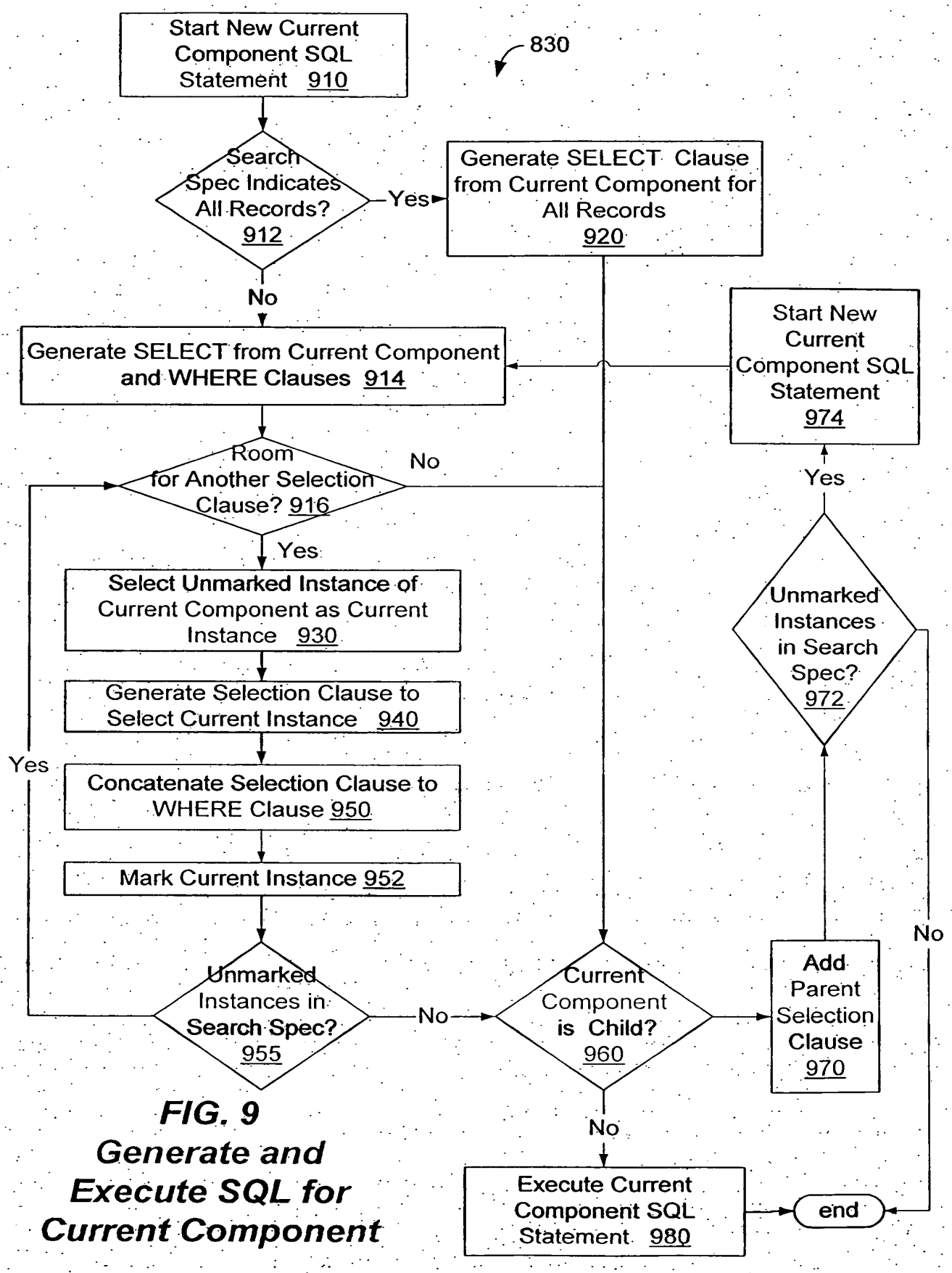


FIG. 9
Generate and Execute SQL for Current Component

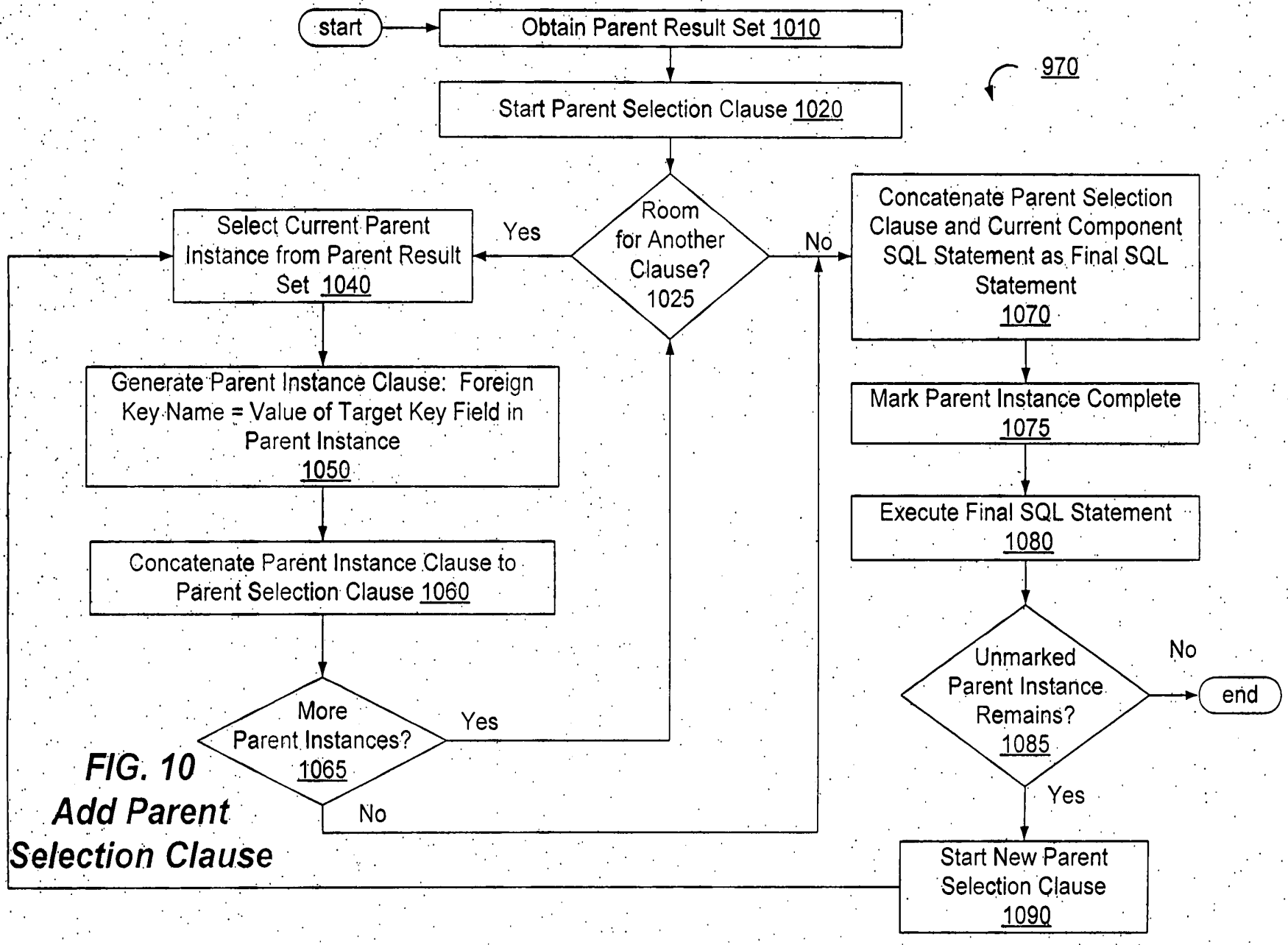
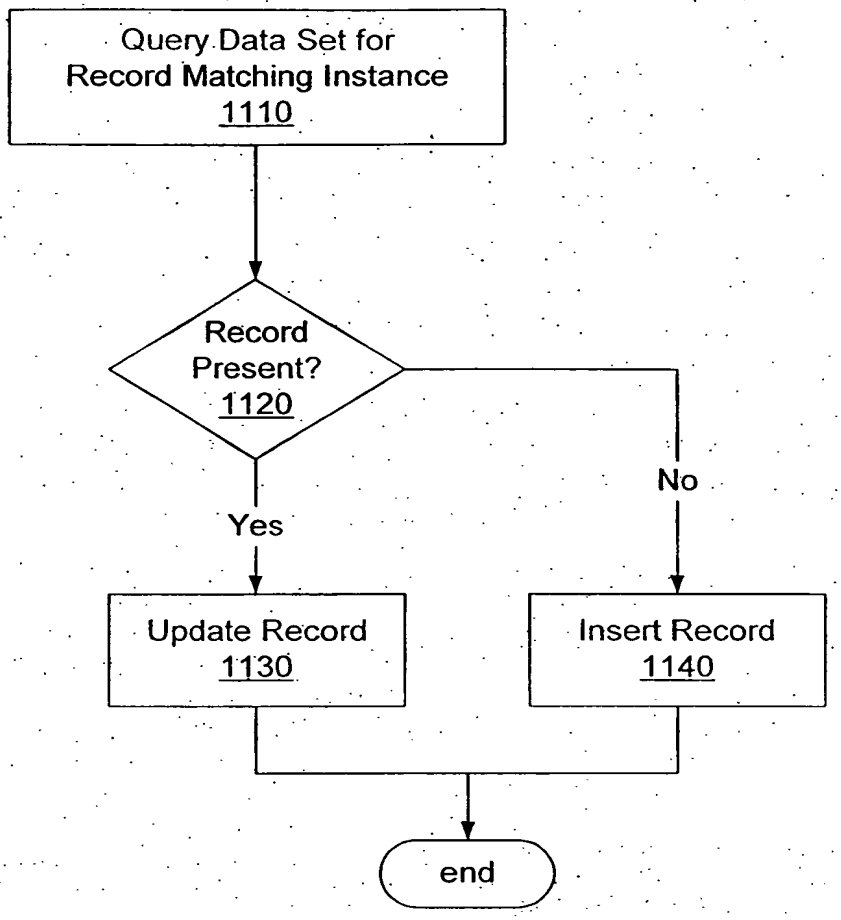


FIG. 10
Add Parent Selection Clause

Attorney Docket No.: M-11757 US
First Named Inventor: Arjun Chandrasekar Iyer
Title: SQL Adapter Business Service



Upsert Record
FIG. 11

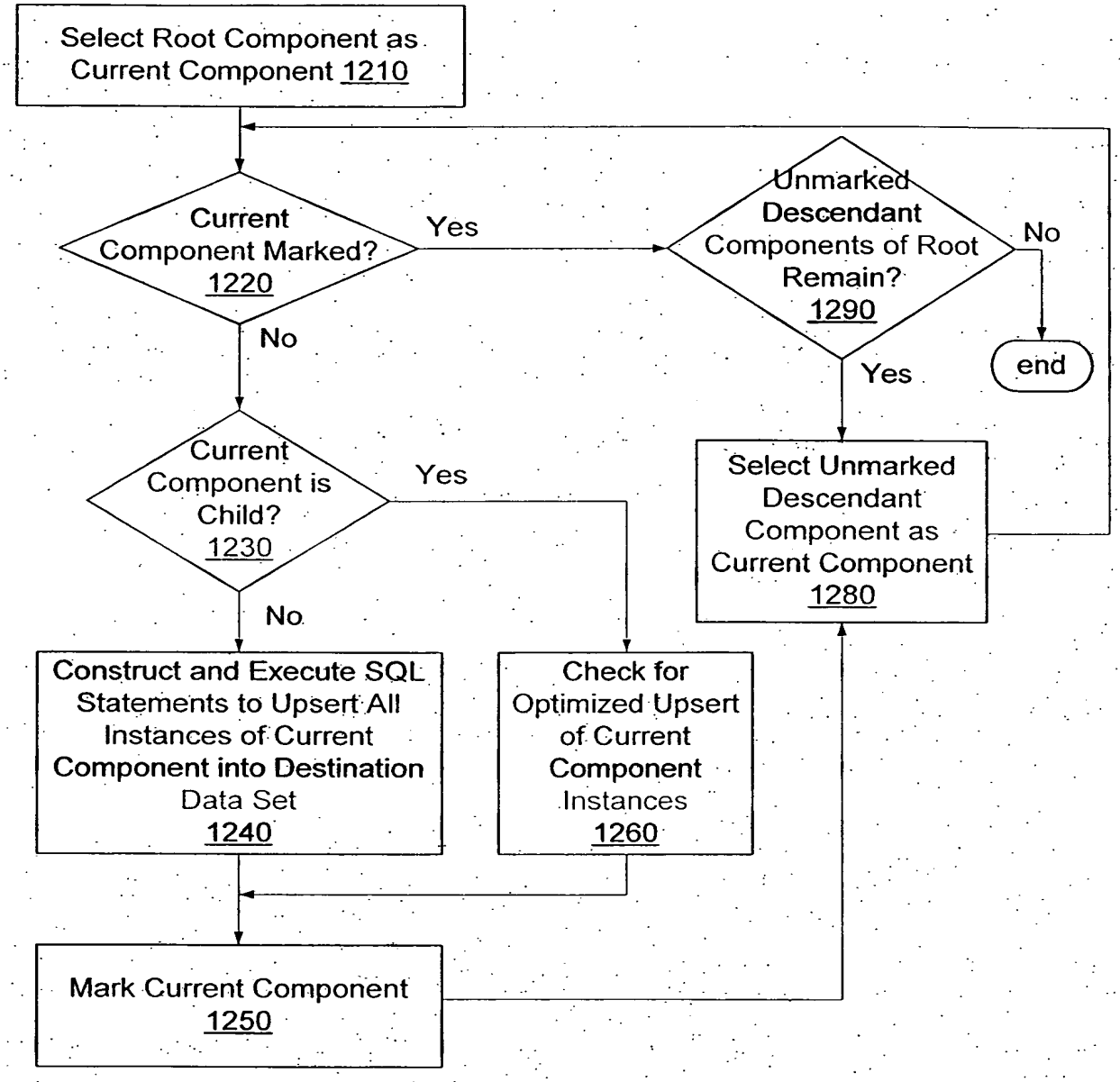


FIG. 12
Upsert Data Set

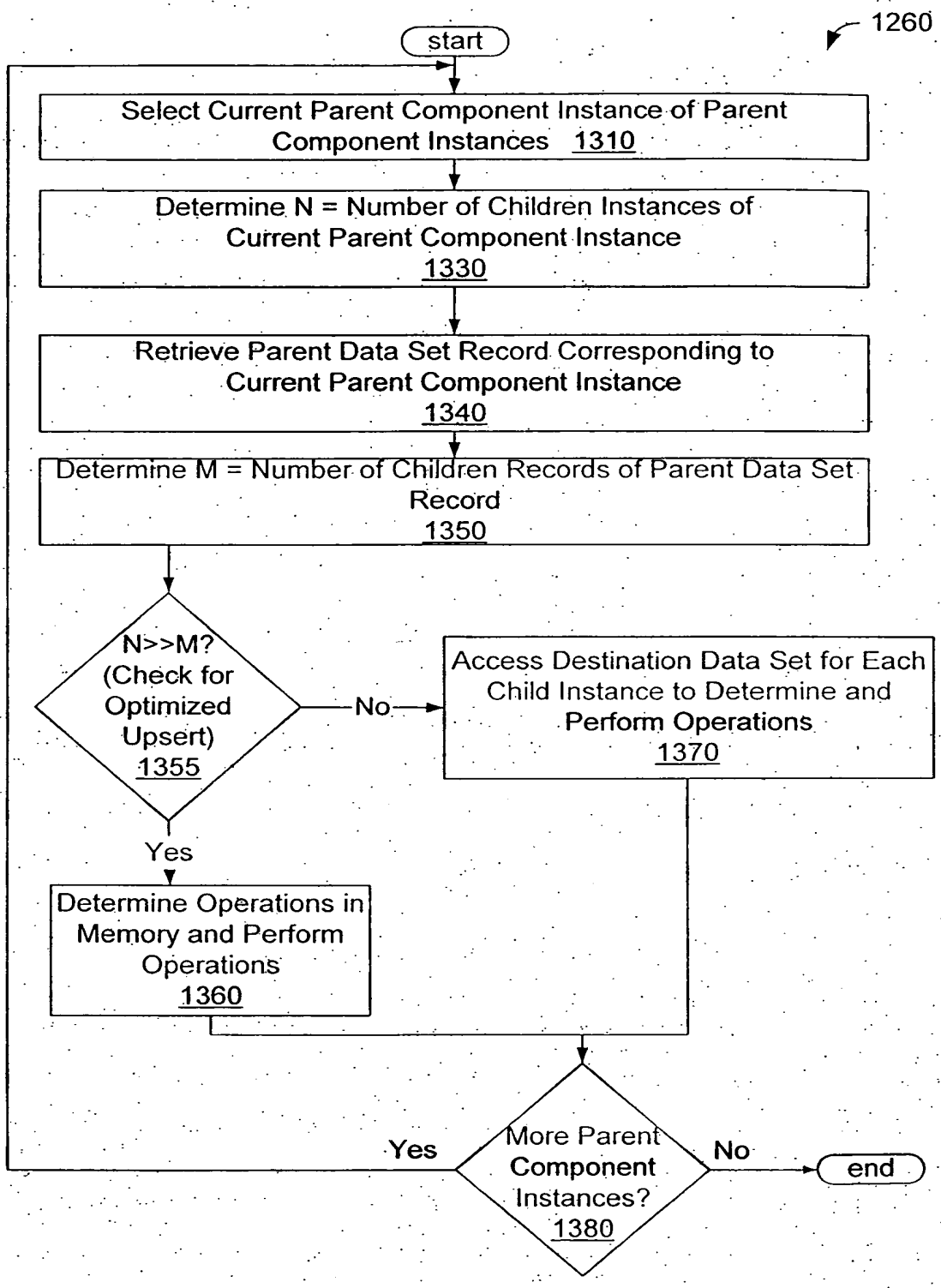


FIG. 13
Check for Optimized Upsert of Child Component Instances

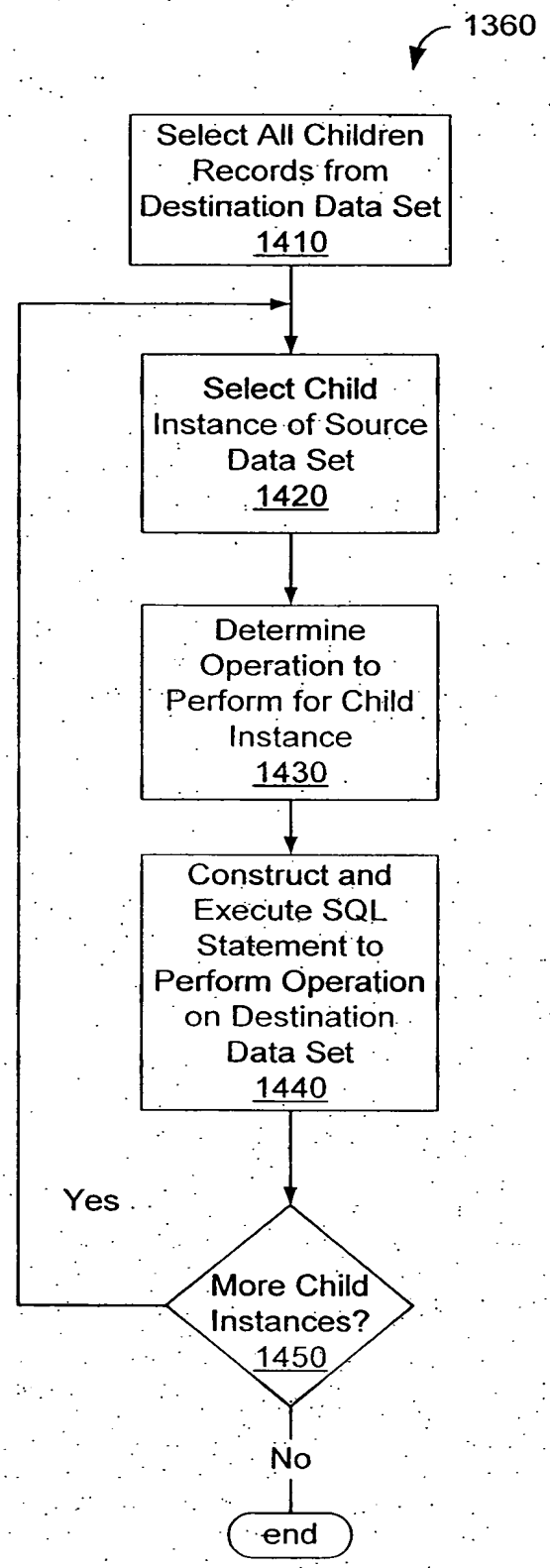


FIG. 14A

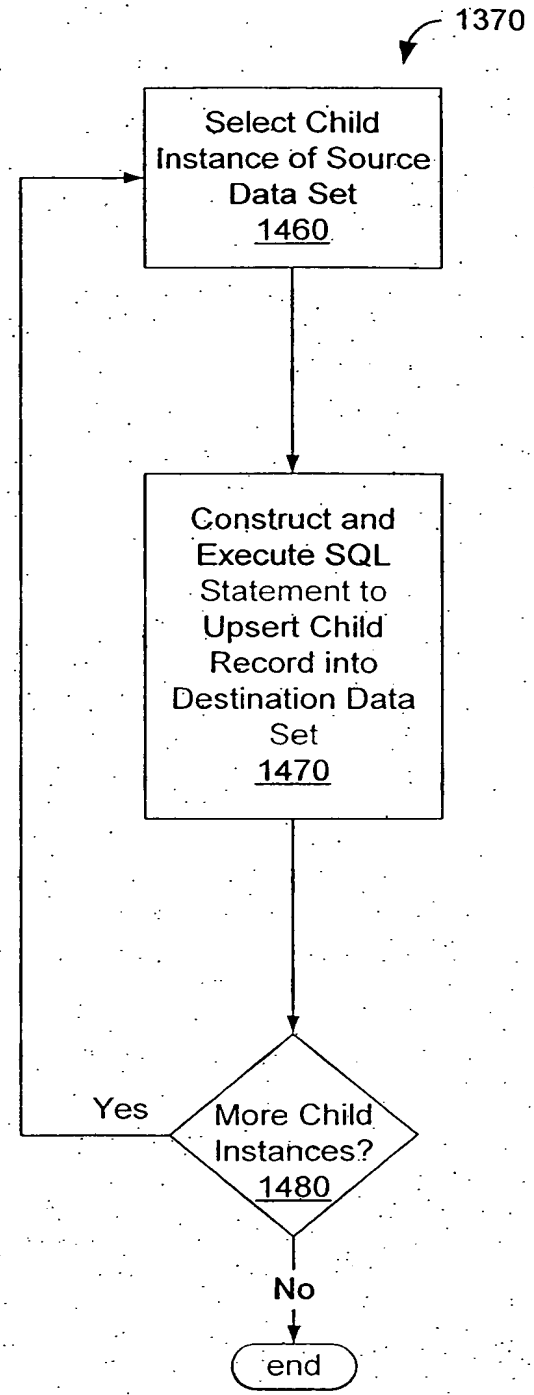


FIG. 14B

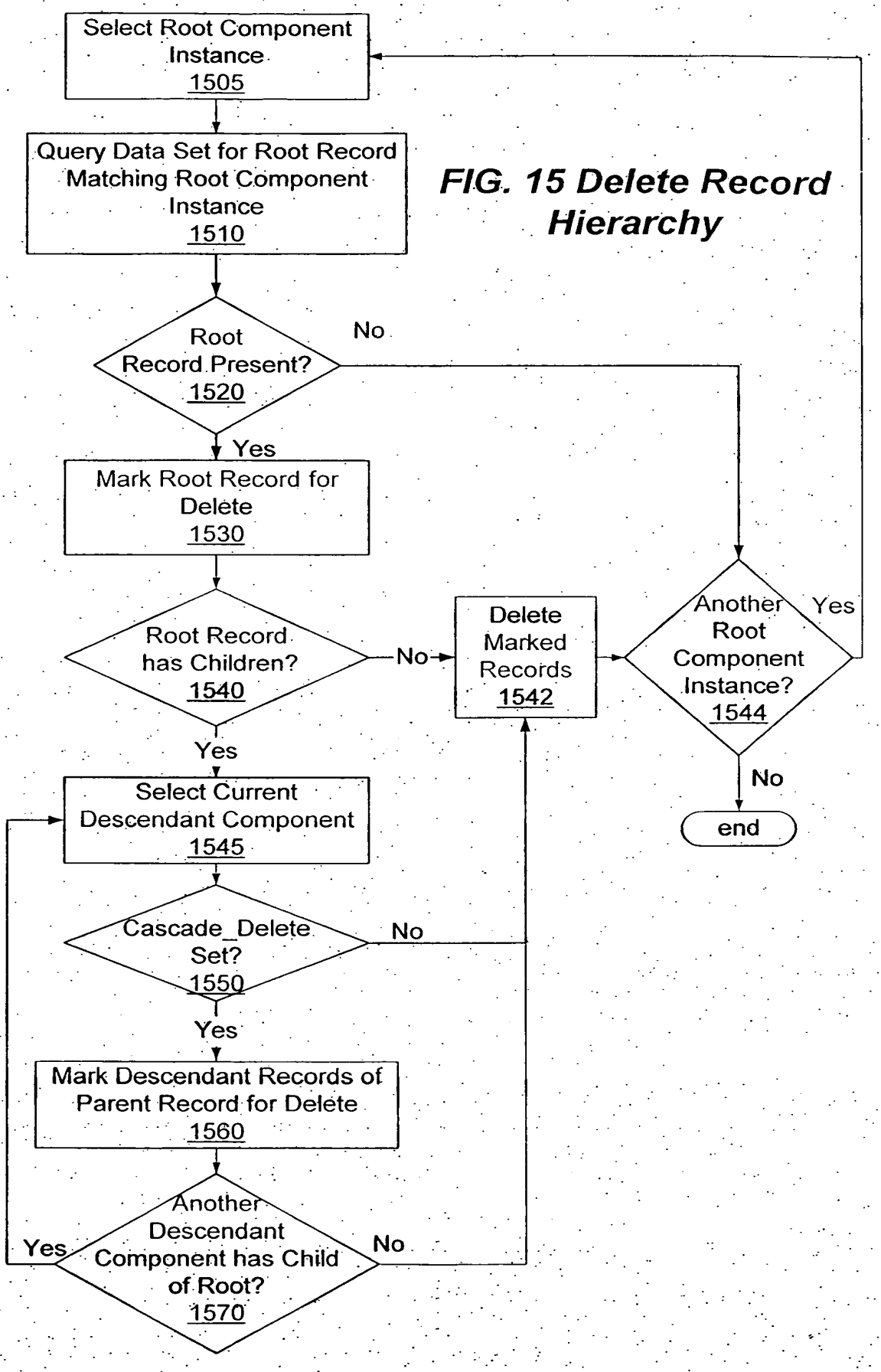


FIG. 15 Delete Record Hierarchy

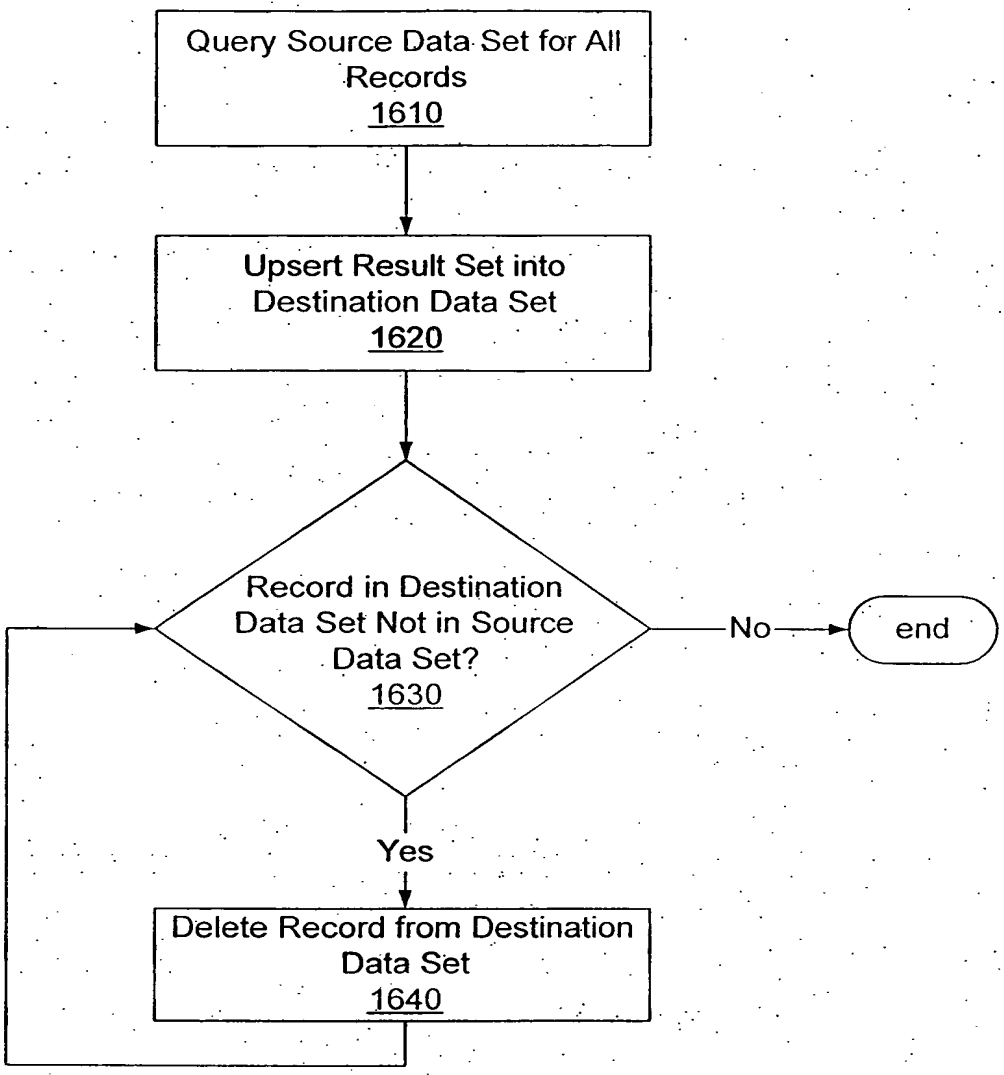


FIG. 16 Synchronize Data Sets

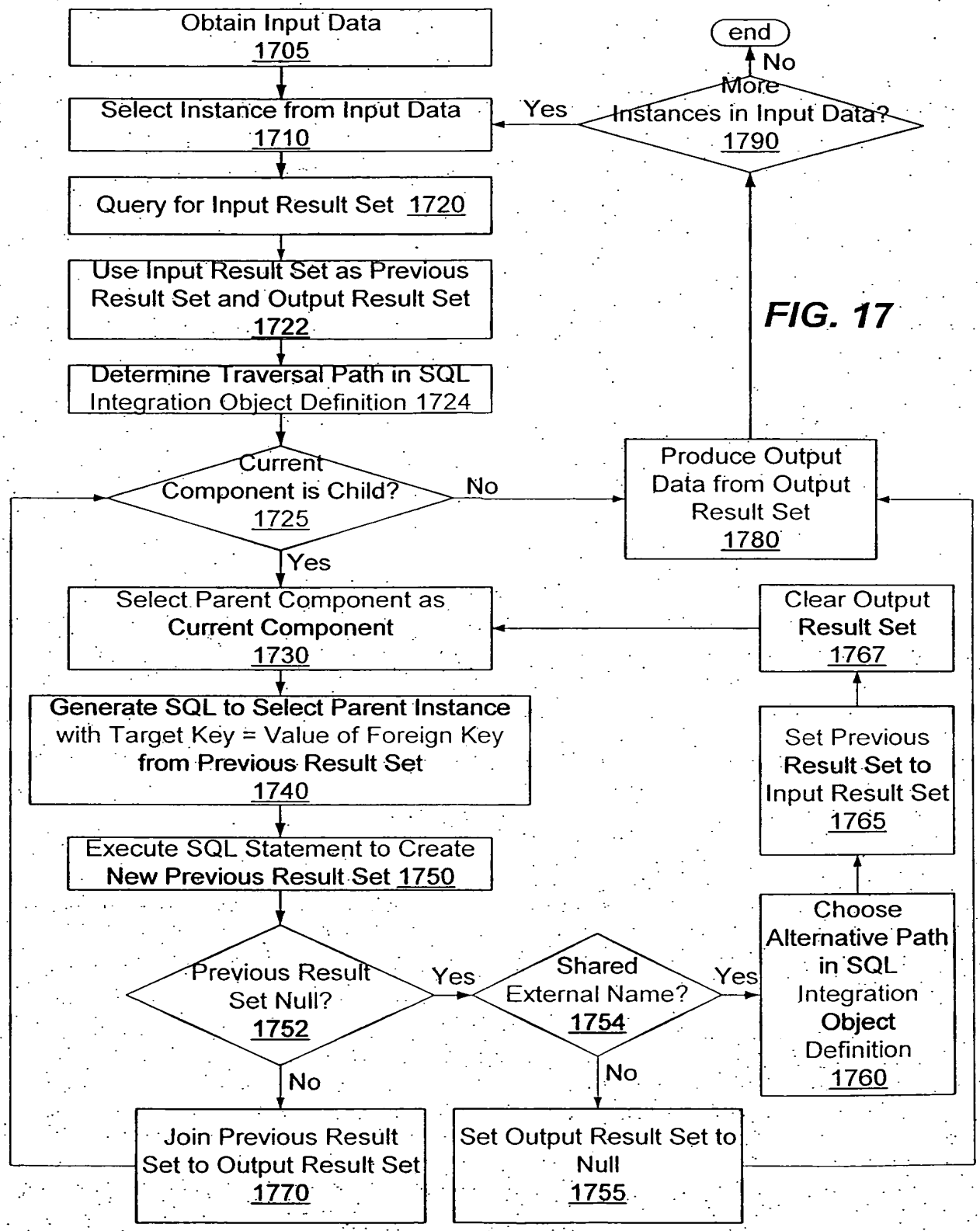
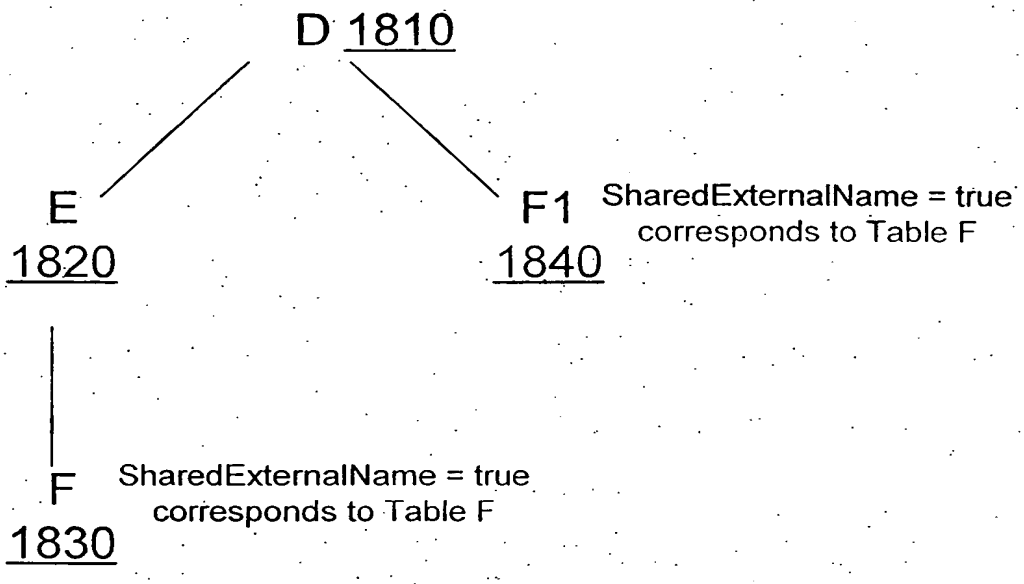

Obtain Input Data 1705
Select Instance from Input Data 1710
Query for Input Result Set 1720
Use Input Result Set as Previous Result Set and Output Result Set 1722
Determine Traversal Path in SQL Integration Object Definition 1724
Current Component is Child? 1725
No
Yes
Select Parent Component as Current Component 1730
Generate SQL to Select Parent Instance with Target Key = Value of Foreign Key from Previous Result Set 1740
Execute SQL Statement to Create New Previous Result Set 1750
Previous Result Set Null? 1752
Yes
No
Shared External Name? 1754
Yes
No
Choose Alternative Path in SQL Integration Object Definition 1760
Set Previous Result Set to Input Result Set 1765
Clear Output Result Set 1767
Join Previous Result Set to Output Result Set 1770
Set Output Result Set to Null 1755
Produce Output Data from Output Result Set 1780
More Instances in Input Data? 1790
Yes
No
end

FIG. 17



Search Specification: FID = 5

FIG. 18

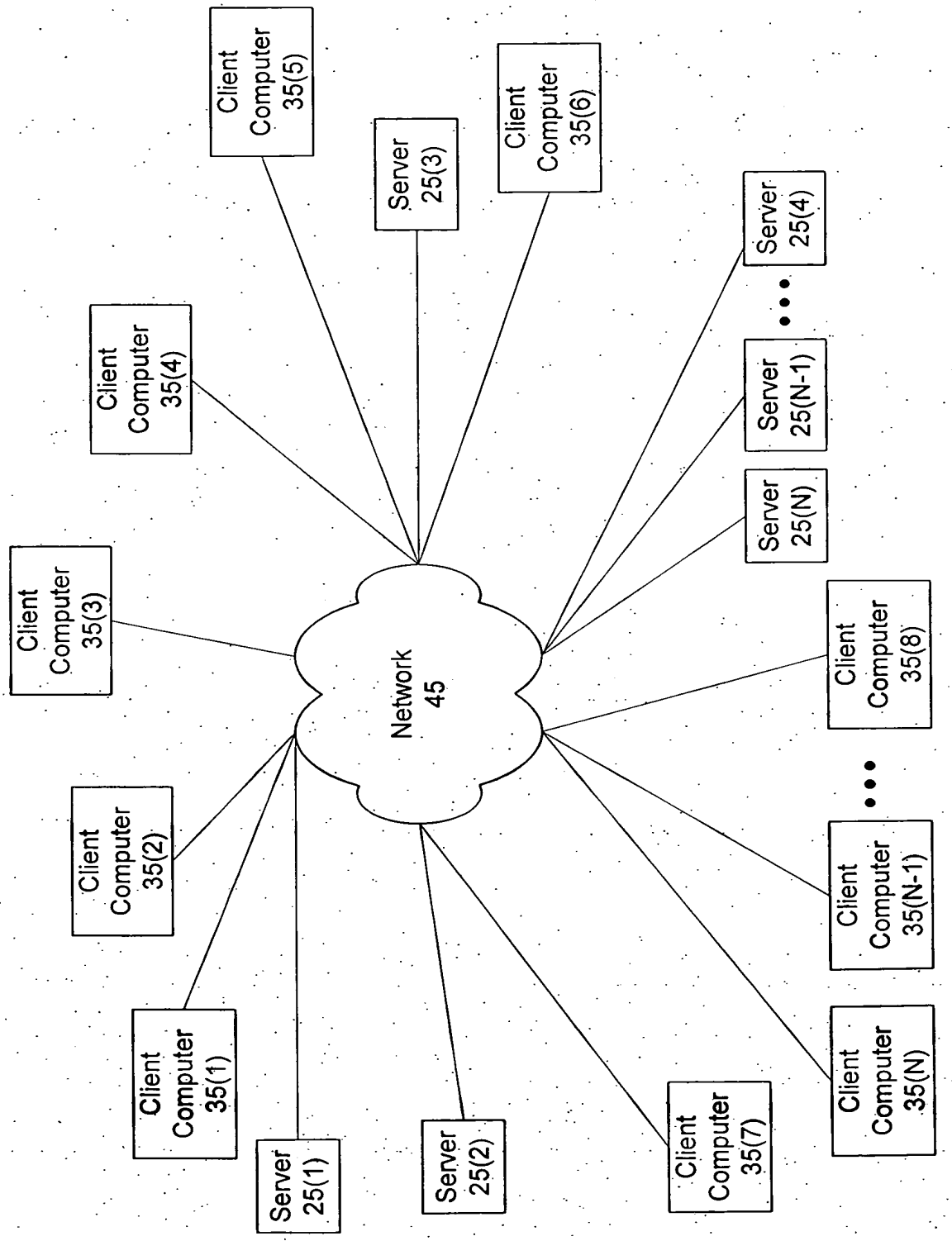

Network
45
Client Computer 35(1)
Client Computer 35(2)
Client Computer 35(3)
Client Computer 35(4)
Client Computer 35(5)
Client Computer 35(6)
Client Computer 35(7)
Client Computer 35(8)
Client Computer 35(N-1)
Client Computer 35(N)
Server 25(1)
Server 25(2)
Server 25(3)
Server 25(4)
Server 25(N-1)
Server 25(N)

FIG. 19

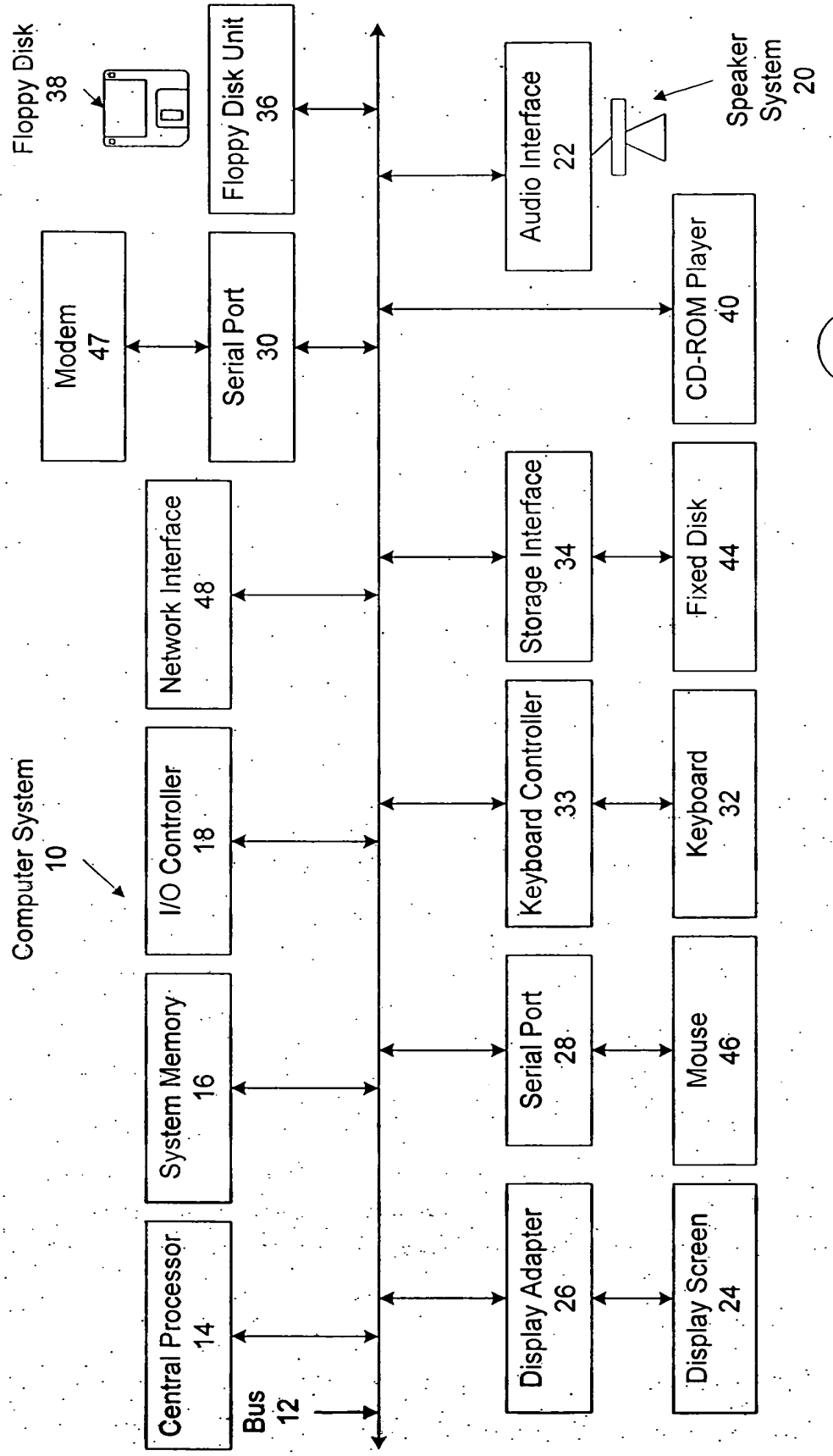

Computer System
10
Bus
12
Central Processor
14
System Memory
16
I/O Controller
18
Display Adapter
26
Display Screen
24
Serial Port
28
Mouse
46
Keyboard Controller
33
Keyboard
32
Storage Interface
34
Fixed Disk
44
Network Interface
48
Modem
47
Serial Port
30
Floppy Disk Unit
36
Floppy Disk
38
Audio Interface
22
Speaker System
20
CD-ROM Player
40
CD-ROM
42

FIG. 20

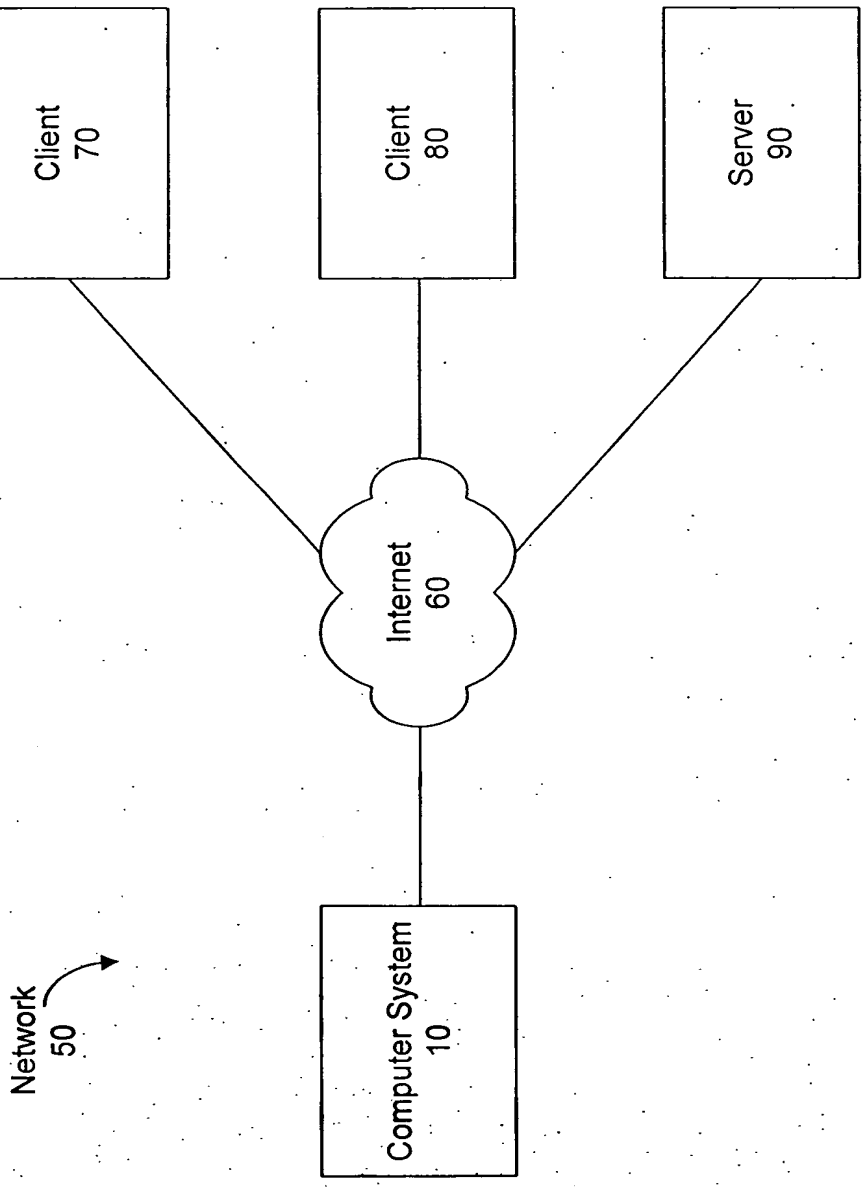

Client
70
Client
80
Server
90
Internet
60
Computer System
10
Network
50

FIG. 21